

Claims

1. A wireless adaptor for using a financial transaction device compatible with the public switched telephone network with a wireless modem, said adaptor comprising:

a phone line interface compatible with the financial transaction device;
an audio frequency modem coupled to said phone line interface and operative to convert digital data signals into audio frequency signals, said audio frequency modem further operative to convert audio frequency signals into digital data signals;

a data transmission interface coupled to the wireless modem, said data transmission interface for transmitting and receiving digital data signals; and

a communications processor coupled to said audio frequency modem for transmission and reception of digital data signals, said communications processor further coupled to said data transmission interface for transmission and reception of digital data signals, said communications processor operative to receive digital data signals from the financial transaction device via said audio frequency modem and transmit said digital data signals to the wireless modem via said data transmission interface, and said communications processor further operative to receive digital data signals from the wireless modem via said data transmission interface and transmit said digital data signals to the financial transaction device via said audio frequency modem and said phone line interface.

2. The adaptor of claim 1 wherein the financial transaction device is a point-of-sale credit card terminal.

3. The adaptor of claim 1 wherein the financial transaction device is a point-of-sale debit card terminal.

4. The adaptor of claim 1 wherein the financial transaction device is an automated teller machine.

5. The adaptor of claim 1 wherein the financial transaction device is a computerized cash register.

6. The adaptor of claim 1 wherein said phone line interface includes a dial tone generator.
7. The adaptor of claim 1 wherein said phone line interface includes a ringing generator.
8. The adaptor of claim 1 wherein said phone line interface includes a dialed digit detector.
9. The adaptor of claim 1 wherein said data transmission interface comprises a serial port.
10. The adaptor of claim 1 further including a data compression circuit to compress said digital data received from the financial transaction device, said communications processor transmitting compressed digital data to the wireless modem via said data transmission interface.
11. The adaptor of claim 1 further including a data encryption circuit to encrypt said digital data received from the financial transaction device, said communications processor transmitting encrypted digital data to the wireless modem via said data transmission interface.
12. The adaptor of claim 11 further including a data compression circuit to compress said digital data received from the financial transaction device, said communications processor transmitting compressed and encrypted digital data to the wireless modem via said data transmission interface.
13. A wireless financial transaction system, the system comprising:
 - a financial transaction device which transmits signals indicative of a financial transaction and receives signals indicative of the authorization or denial of a financial transaction;
 - a wireless adaptor coupled to said financial transaction device;
 - a first wireless modem coupled to said wireless adaptor;
 - a second wireless modem;

a wireless transmission system for transmitting signals from said first wireless modem to said second wireless modem and for transmitting signals from said second wireless modem to said first wireless modem;

a first communications means coupled to said second wireless modem;
a second communications means;

an authorization processor coupled to said second communications means, said authorization processor receiving signals indicative of a financial transaction via said second communications means and transmitting signals indicative of the authorization or denial of a financial transaction via said second communications means; and

a host computer coupled to said first communications means and said second communications means, said host computer receiving said signals indicative of a financial transaction from said financial transaction device via said wireless adaptor, said first wireless modem, said wireless transmission system, said second wireless modem and said first communications means, said host computer further transmitting to said authorization processor said signals indicative of a financial transaction via said second communications means, said host computer further receiving said signals indicative of the authorization or denial of a financial transaction from said authorization processor via said second communications means, said host computer further transmitting said signals indicative of the authorization or denial of a financial transaction to said financial transaction device via said first communications means, said second wireless modem, said wireless transmission system, said first wireless modem and said wireless adaptor.

14. The system of claim 13 wherein said financial transaction device is a point-of-sale credit card terminal.

15. The system of claim 13 wherein said financial transaction device is a point-of-sale debit card terminal.

16. The system of claim 13 wherein said financial transaction device is an automated teller machine.

17. The system of claim 13 wherein said financial transaction device is a computerized cash register.

18. The system of claim 13 wherein said host computer, said second communications means and said authorization processor are portions of a single computer system.

19. The system of claim 13 wherein said first communications means is a cable connected between said second wireless modem and said host computer.

20. The system of claim 13 wherein said first communications means comprises a public switched telephone network, a first modem coupled to said second wireless modem and said public switched telephone network, and a second modem coupled to said host computer and said public switched telephone network.

21. The system of claim 13 wherein said first communications means comprises a packet switching network, a first packet assembler and disassembler coupled to said second wireless modem and said packet switching network, and a second packet assembler and disassembler coupled to said host computer and said packet switching network.

22. The system of claim 13 wherein said first communications means comprises a local area network, a first local area network adaptor coupled to said second wireless modem and said local area network, and a second local area network adaptor coupled to said host computer and said local area network.

23. The system of claim 13 wherein said first communications means comprises a packet network, a first local area network, a first local area network adaptor coupled to said second wireless modem and said first local area network, a first router coupled to said first local area network and said packet network, a second local area network, a second local area network adaptor coupled to said host computer and said second local area network, and a second router coupled to said second local area network and said packet network.

24. The system of claim 13 wherein said second communications means comprises a public switched telephone network, a first modem coupled to said host computer and said public switched telephone network, and a second

modem coupled to said authorization processor and said public switched telephone network.

25. The system of claim 13 wherein said second communications means comprises a packet switching network, a first packet assembler and disassembler coupled to said host computer and said packet switching network, and a second packet assembler and disassembler coupled to said authorization processor and said packet switching network.

26. The system of claim 13 wherein said second communications means comprises a local area network, a first local area network adaptor coupled to said host computer and said local area network, and a second local area network adaptor coupled to said authorization processor and said local area network.

27. The system of claim 13 wherein said second communications means comprises a packet network, a first local area network, a first local area network adaptor coupled to said host computer and said first local area network, a first router coupled to said first local area network and said packet network, a second local area network, a second local area network adaptor coupled to said authorization processor and said second local area network, and a second router coupled to said second local area network and said packet network.

28. A wireless financial transaction system, said system comprising:

a financial transaction device which transmits signals indicative of a financial transaction and receives signals indicative of the authorization or denial of a financial transaction;

a wireless adaptor coupled to said financial transaction device; *insert from cl 1*

a first wireless modem coupled to said wireless adaptor;

a second wireless modem;

a wireless transmission system for transmitting signals from said first wireless modem to said second wireless modem and for transmitting signals from said second wireless modem to said first wireless modem;

a first communications means coupled to said second wireless modem;

a second communications means;

a wireless network terminal coupled to said first communications means and said second communications means, said wireless network terminal receiving and transmitting digital data, said wireless network terminal operative to receive digital data from said second wireless modem via said first communications means and re-transmit said digital data via said second communications means, said wireless network terminal being further operative to receive digital data via said second communications means and re-transmit said digital data to said second wireless modem via said first communications means;

a third communications means;

an authorization processor coupled to said third communications means, said authorization processor receiving signals indicative of a financial transaction via said third communications means and transmitting signals indicative of the authorization or denial of a financial transaction via said third communications means; and

a host computer coupled to said second communications means and said third communications means, said host computer receiving said signals indicative of a financial transaction from said financial transaction device via said wireless adaptor, said first wireless modem, said wireless transmission system, said second wireless modem, said first communications means, said wireless network terminal and said second communications means, said host computer further transmitting to said authorization processor said signals indicative of a financial transaction via said third communications means, said host computer further receiving said signals indicative of the authorization or denial of a financial transaction from said authorization processor via said third communications means, said host computer further transmitting said signals indicative of the authorization or denial of a financial transaction to said financial transaction device via said second communications means, said wireless network terminal, said first communications means, said second wireless modem, said wireless transmission system, said first wireless modem and said wireless adaptor.

29. The system of claim 28 wherein the financial transaction device is a point-of-sale credit card terminal.

30. The system of claim 28 wherein the financial transaction device is a point-of-sale debit card terminal.

31. The system of claim 28 wherein the financial transaction device is an automated teller machine.

32. The system of claim 28 wherein the financial transaction device is a computerized cash register.

33. The system of claim 28 wherein said host computer, said third communications means and said authorization processor are portions of a single computer system.

34. The system of claim 28 wherein said second communications means is a serial data link coupled to said wireless network terminal and said host computer.

35. The system of claim 28 wherein said second communications means comprises a public switched telephone network, a first modem coupled to said wireless network terminal and said public switched telephone network, and a second modem coupled to said host computer and said public switched telephone network.

36. The system of claim 28 wherein said second communications means comprises a packet switching network, a first packet assembler and disassembler coupled to said wireless network terminal and said packet switching network, and a second packet assembler and disassembler coupled to said host computer and said packet switching network.

37. The system of claim 28 wherein said second communications means comprises a local area network, a first local area network adaptor coupled to said wireless network terminal and said local area network, and a second local area network adaptor coupled to said host computer and said local area network.

38. The system of claim 28 wherein said second communications means comprises a packet network, a first local area network, a first local area network adaptor coupled to said wireless network terminal and said first local area network, a first router coupled to said first local area network and said packet network, a second local area network, a second local area network adaptor coupled

to said host computer and said second local area network, and a second router coupled to said second local area network and said packet network.

39. The system of claim 28 wherein said third communications means comprises a public switched telephone network, a first modem coupled to said host computer and said public switched telephone network, and a second modem coupled to said authorization processor and said public switched telephone network.

40. The system of claim 28 wherein said third communications means comprises a packet switching network, a first packet assembler and disassembler coupled to said host computer and said packet switching network, and a second packet assembler and disassembler coupled to said authorization processor and said packet switching network.

41. The system of claim 28 wherein said third communications means comprises a local area network, a first local area network adaptor coupled to said host computer and said local area network, and a second local area network adaptor coupled to said authorization processor and said local area network.

42. The system of claim 28 wherein said third communications means comprises a packet network, a first local area network, a first local area network adaptor coupled to said host computer and said first local area network, a first router coupled to said first local area network and said packet network, a second local area network, a second local area network adaptor coupled to said authorization processor and said second local area network, and a second router coupled to said second local area network and said packet network.

43. A method of operating a financial transaction device compatible with the public switched telephone network and which transmits signals indicative of a financial transaction and which receives signals indicative of the authorization or denial of a financial transaction in a wireless manner, said method comprising the steps of:

receiving from the financial transaction device the signals indicative of a financial transaction using a phone line interface and communications processor;

transmitting said received signals indicative of a financial transaction from said communications processor to a host computer via first and second wireless modems and associated communications means therefor;

transmitting said received signals indicative of a financial transaction from said host computer to an authorization processor;

determining at an authorization processor the authorization or denial of a financial transaction;

transmitting signals indicative of the authorization or denial of a financial transaction from an authorization processor to a host computer;

receiving at a host computer from an authorization processor said signals indicative of the authorization or denial of a financial transaction;

transmitting said received signals indicative of the authorization or denial of a financial transaction from said host computer to said communications processor via two wireless modems and associated communications means therefor; and

transmitting from said communications processor to the financial transaction device said received signals indicative of the authorization or denial of a financial transaction using the phone line interface.

44. The method of claim 43 wherein the financial transaction device is a point-of-sale credit card terminal.

45. The method of claim 43 wherein the financial transaction device is a point-of-sale debit card terminal.

46. The method of claim 43 wherein the financial transaction device is an automated teller machine.

47. The method of claim 43 wherein the financial transaction device is a computerized cash register.

48. The method of claim 43 wherein the step of receiving signals from the financial transaction device using said phone line interface includes the additional step of providing a dial tone signal to the financial transaction device using said phone line interface.

49. The method of claim 43 wherein the step of receiving signals from the financial transaction device using said phone line interface includes the additional step of providing a ringing signal to the financial transaction device using said phone line interface.

50. A method of providing additional data security between a host computer which communicates with an authorization processor and which also communicates with a financial transaction device compatible with the public switched telephone network, said financial transaction device capable of transmitting signals indicative of a financial transaction and further capable of receiving signals indicative of the authorization or denial of a financial transaction, said method comprising the steps of:

receiving the signals from the financial transaction device indicative of a financial transaction using a phone line interface and communications processor;

encrypting the signals received by said phone line interface, thereby producing encrypted data indicative of a financial transaction;

transmitting said encrypted data from said communications processor to a host computer;

decrypting said encrypted data at said host computer to recover digital data representative of the signals indicative of a financial transaction as transmitted by the financial transaction device;

transmitting from said host computer to an authorization processor said recovered digital data and receiving from said authorization processor at said host computer signals indicative of the authorization or denial of a financial transaction; and

transmitting from said host computer to the financial transaction device the signals indicative of the authorization or denial of a financial transaction.

51. The method of claim 50 wherein the financial transaction device is a point-of-sale credit card terminal.

52. The method of claim 50 wherein the financial transaction device is a point-of-sale debit card terminal.

53. The method of claim 50 wherein the financial transaction device is an automated teller machine.

54. The method of claim 50 wherein the financial transaction device is a computerized cash register.

55. The method of claim 50 wherein the step of transmitting from said host computer to the financial transaction device the signals indicative of the authorization or denial of a financial transaction comprises the following steps:

encrypting the signals indicative of the authorization or denial of a financial transaction to produce encrypted data indicative of the authorization or denial of a financial transaction;

transmitting from said host computer to said communications processor said encrypted data indicative of the authorization or denial of a financial transaction;

decrypting said encrypted data indicative of the authorization or denial of a financial transaction to recover digital data representative of the signals indicative of the authorization or denial of a financial transaction; and

transmitting to the financial transaction device from the communications processor said recovered digital data indicative of the authorization or denial of a financial transaction.

56. The method of claim 55 wherein the financial transaction device is a point-of-sale credit card terminal.

57. The method of claim 55 wherein the financial transaction device is a point-of-sale debit card terminal.

58. The method of claim 55 wherein the financial transaction device is an automated teller machine.

59. The method of claim 55 wherein the financial transaction device is a computerized cash register.